

## A VARIETAL CORRECTION IN *PUERARIA MONTANA* (LEGUMINOSAE)

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### ABSTRACT

A correction is made in the epithet employed in one of the recognized varieties of *Pueraria montana* (Lour.) Merr. (Leguminosae), by replacing var. *chinensis* (Ohwi) Maesen & Almeida with var. *thomsonii* (Benth.) J.H. Wiersema ex D.B. Ward. A key is given to the three varieties of the species.

KEY WORDS: *Pueraria*, Kudzu, Leguminosae, nomenclature

*Pueraria*, an Asian genus of leguminous vines, has recently been monographed by L.J.G. van der Maesen (1985). Of the seventeen species recognized by Maesen, one, correctly known as *P. montana* (Lour.) Merr., is now widespread outside its native range. Within *P. montana*, by consolidation of a diffuse, formerly little-understood complex of taxa, Maesen distinguished three varieties. His *P. montana* var. *lobata* (Willd.) Maesen & Almeida has become notorious in the southeastern United States for its vigorous invasive properties, under the familiar name Kudzu.

Maesen, however, upon completion of what appears to be a solid, specimen-based review of the taxonomy of *Pueraria*, went astray in the nomenclature of his newly consolidated species, by assigning it the name *P. lobata* (Willd.) Ohwi. He cited the basionym of *P. montana* as 1790 and *P. lobata* as 1802, but unaccountably chose the epithet of later date. This error was quickly noted, and was corrected by Maesen & Almeida (1988). The history of the changes in name of the Kudzu and convergence on *P. montana* has been documented by Ward (1998).

After completion of Ward (1998), one of its reviewers, Dr. John H. Wiersema, called to its author's attention that Maesen was also remiss in the formation of the name he assigned to a second variety of *Pueraria montana*. This second entity occurs from India and Burma through southern China and eastward to the Philippines and Hawaii, and differs primarily in its somewhat larger flowers and fruits. In his 1985 monograph, in which he treated the Kudzu as *Pueraria lobata*, Maesen employed var. *thomsonii*[?] (Benth.) Maesen as the varietal name. The basis for this epithet was *Pueraria thomsonii* Benth. (1867).

In their 1988 "correction", Maesen & Almeida changed not only the name of the species (to *Pueraria montana*), but the name of this second variety -- to var. *chinensis* (Ohwi) Maesen & Almeida. In a recent detailed synopsis of the genus, Maesen (1994) has again put forward this varietal combination. This epithet was based upon another Bentham name, *Neustanthus chinensis* (Bentham 1861), and upon *Pueraria lobata* var. *chinensis* (Benth.) Ohwi. Ohwi (1947) had explicitly based his var. *chinensis* upon Bentham's *Neustanthus chinensis*, which in turn is typified by Bentham's type from Hong Kong. Maesen & Almeida's stated reason for selecting this epithet was the well-established rule of the *International Code of Botanical Nomenclature* (1994) that a name never has priority outside its own rank, a rather specious argument in that *chinensis* is prior at both specific and varietal rank. Why Maesen had not used *chinensis* in 1985 is unclear, but it is probable that in this earlier paper he rejected that epithet because he indicated his judgment that Ohwi (1947) had misapplied Bentham's name.

Although Maesen (1985) would appear to be correct in that Ohwi's use of *chinensis* was not the same as that of Bentham in 1861, Ohwi's new combination remains valid. If a new combination is derived from a previously published legitimate name, its validity is not affected by a possible misunderstanding by the new author of its original application (*I.C.B.N.*, Art. 7.4). Maesen & Almeida in 1988 recognized this defect in Maesen's 1985 argument, and formed the combination *Pueraria montana* var. *chinensis* (Ohwi) Maesen & Almeida.

But error once again thwarted Maesen & Almeida's well-intentioned effort to clarify and correct the nomenclature of Kudzu. Although Ohwi (1947) had established *chinensis* at varietal level, his name, as transferring author, cannot appear in the authorship of other combinations subsequently made at varietal level; Maesen & Almeida's new combination, *Pueraria montana* var. *chinensis*, should have borne the authorship "(Benth.) Maesen & Almeida."

Far more grievous -- and fatal to the legitimacy of Maesen & Almeida's new combination -- for *Pueraria montana* var. *chinensis* to have priority at varietal rank from 1947 (thus earlier than var. *thomsonii* of 1985) it must, like Ohwi's *P. lobata* var. *chinensis*, be typified on *N. chinensis* Benth. However, Maesen in 1985 had assigned Bentham's type of *N. chinensis*, not to var. *thomsonii*, but to var. *lobata* (now, *P. montana* var. *lobata*). *Neustanthus chinensis* must therefore be viewed as a synonym of var. *lobata*; by Maesen's own determination, the epithet *chinensis* is unavailable for application to this second variety of Kudzu and should not have been employed by Maesen & Almeida. Bentham's *thomsonii* thus re-emerges as the earliest available epithet at varietal level. (The original spelling of *thomsonii* is corrected to *thomsonii*, as required by yet another inflexible provision of the *Code* [*I.C.B.N.*, Art. 60.11].)

The initial analysis of this issue by Dr. Wiersema, and his impetus that it be documented here, merits his inclusion in the authorship of the required new combination:

*Pueraria montana* (Lour.) Merr. var. *thomsonii* (Benth.) J.H. Wiersema ex D.B. Ward, comb. nov. BASIONYM: *Pueraria thomsonii* Bentham, J. Linn Soc. Bot. 9:122. 1867.

Since the underlying monograph and subsequent synopsis (Maesen 1985, 1994) are not as widely available as might be wished, since the combinations and authors Maesen employed (in 1985) are now changed, and since the varieties of this species can be expected to continue to extend their ranges into new areas, it is appropriate that a key to these varieties be provided here. Maesen's 1985 key is selected for reproduction, rather than his revised 1994 key, in that the earlier version is more extended with numerous details that may prove useful in understanding the differences that separate these three varieties.

### KEY TO VARIETIES OF *PUERARIA MONTANA*

Flowers large, corolla (18-)20 mm or longer, calyx (15-)17 mm or longer, appressed gray-pubescent, lobes 2-4 mm wide, overlapping; leaflets often trilobed; fruits large, 8-13 cm long, 9-13 mm wide.....  
..... var. *thomsonii* (Benth.) J.H. Wiersma ex D.B. Ward

Flowers smaller.

Flowers medium, corolla 12-20 mm long, calyx 10-18 mm long, hairs spreading, brown, lobes 2.0-3.5 mm wide, lower one narrow-elongate, conspicuously longer than the others; leaflets trilobed, occasionally entire, about as wide as long, membranaceous; fruits medium to large, 5-13 cm long, 7-12 mm wide...  
..... var. *lobata* (Willd.) Maesen & Almeida

Flowers small, corolla up to 12 (15) mm long, calyx 8-11 mm long, lobes 1-2 mm wide, short brown pubescent or almost glabrous; leaflets mostly entire, often narrower than long, more or less hairy, coriaceous; fruits small, 4-10 cm long, 6-9 mm wide. .... var. *montana*

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